

# TREATY ON INTERNATIONAL COOPERATION IN THE AREA OF PATENTS

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT ON PATENTABILITY

(Chapter II of the Treaty on International Cooperation in the Area of Patents)

Applicant's or Agent's File Ref. 41 935..be	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA/416
International Application No. PCT/EP2004/006760	International Filing Date (Month/Day/Year) June 23, 2004	Priority Date (Month/Day/Year) July 22, 2003	
International Patent Classification (IPC) or National Classification and IPC B21B28/04, A46B9/02			
Applicant SMS DEMAG AKTIENGESELLSCHAFT			

<p>1. This international preliminary examination report has been prepared by the duly commissioned International Preliminary Examining Authority according to Article 35 and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 pages, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES; these comprise</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and the International Office) a total of 8 pages; these are</p> <p style="margin-left: 40px;"><input checked="" type="checkbox"/> pages of the description, claims, and/or drawings which have been amended and are the basis for this report and/or pages containing rectifications that have been approved by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 40px;"><input type="checkbox"/> pages which replace earlier pages but which, for the reasons given in field No. 1, item 4, and in the supplementary field, in the opinion of this Authority, contain a change that goes beyond the disclosed contents of the international application in the version originally submitted.</p> <p>b. <input type="checkbox"/> (sent only to the International Office): (please specify the type and number of the electronic data carrier(s)), which contain a sequence listing and/or the tables that belong to it, only in computer-readable form, as specified in the supplementary field regarding the sequence listing (see Section 802 of the Administrative Instructions)</p> <p>4. This report contains indications relating to the following items:</p> <p style="margin-left: 40px;"><input checked="" type="checkbox"/> Field No. I Basis of the report</p> <p style="margin-left: 40px;"><input type="checkbox"/> Field No. II Priority</p> <p style="margin-left: 40px;"><input type="checkbox"/> Field No. III Nonestablishment of opinion with respect to novelty, inventive activity, and commercial viability.</p> <p style="margin-left: 40px;"><input type="checkbox"/> Field No. IV Lack of unity of invention.</p> <p style="margin-left: 40px;"><input checked="" type="checkbox"/> Field No. V Substantiated determination under Article 35(2) with respect to novelty, inventive activity, and commercial viability; documents and declarations in support of this determination.</p> <p style="margin-left: 40px;"><input type="checkbox"/> Field No. VI Certain documents cited</p> <p style="margin-left: 40px;"><input type="checkbox"/> Field No. VII Certain defects in the international application</p> <p style="margin-left: 40px;"><input type="checkbox"/> Field No. VIII Certain observations on the international application</p>
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Date of submission of the petition: December 17, 2004	Date of completion of this report: November 4, 2005
Name and mailing address of the office assigned to perform the preliminary examination: European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel: +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3018	Authorized Officer:  Petrucchi, L.  Tel: +31 70 340-3945

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT ON  
PATENTABILITY**

International File No.: **PCT/EP2004/006760**

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**Field No. I    Basis of the Report**

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1. With respect to the **language**, the report is based on the international application in the language in which it was submitted unless otherwise indicated under this item.
- ☐ The report is based on a translation from the original language into the following language, which is the language of the translation, which was submitted for the following purpose:
- ☐ international search (under Rules 12.3 and 23.1 b)).
- ☐ publication of the international application (under Rule 12.4).
- ☐ international preliminary examination (under Rule 55.2 and/or Rule 55.3).
2. With regard to the **constituent parts\*** of the international application, the report is based on *(replacement pages which were submitted to the application office in compliance with a request according to Article 14 are considered "originally filed" in the context of this report and are not attached to the report)*:

**Specification, pages:**

2, 3, 7, 8	as originally filed
1, 4-6, 6a	received on January 20, 2005 with letter dated January 19, 2005

**Claims, Nos.:**

9, 10	as originally filed
1-8	received on January 20, 2005 with letter dated January 19, 2005

**Drawings, Pages:**

1/4-4/4	as originally filed
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☐ a sequence listing and/or any accompanying tables – see supplementary field regarding the sequence listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description: pages
- ☐ the claims: Nos.
- ☐ the drawings: sheets/figures:
- ☐ the sequence listing (*exact details*):

☐ any tables belonging to the sequence listing (*exact details*):

4. ☐ This report has been prepared as if (some of) the amendments attached to this report and listed below had not been made, since for the reasons specified in the supplementary field they are considered by this Authority to go beyond the disclosure as originally filed (Rule 70.2 c)).

☐ the description: pages

☐ the claims: Nos.

☐ the drawings: sheets/figures:

☐ the sequence listing (*exact details*):

☐ any tables belonging to the sequence listing (*exact details*):

\* If Item 4 applies, some or all of these pages can be furnished with the comment "replaced".

**INTERNATIONAL PRELIMINARY  
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**Field No. V Substantiated determination according to Article 35(2) with respect to novelty, inventive activity, and commercial viability; documents and declarations in support of this determination.**

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**1. Determination**

Novelty (N):	Yes: Claims 1-8
	No: Claims
Inventive Activity (AI):	Yes: Claims 1-8
	No: Claims
Commercial Viability (CV):	Yes: Claims 1-8
	No: Claims

**2. Documents and Declarations (Rule 70.7):**

See attached page.

**INTERNATIONAL PRELIMINARY  
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PATENTABILITY (ATTACHED PAGE)**

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**Re Item V**

**Substantiated determination with respect to novelty, inventive activity, and commercial viability; documents and declarations in support of this determination**

1. The following documents are cited:

**D1:** JP 52[1977]-092,855 (HITACHI LTD) August 4, 1977 (1977-08-04)

**D2:** US 2,953,952 A (ALEXANDER GEORGE O) September 27, 1960 (1960-09-27)

2. The features claimed in lines 5-6 of Claim 2 do not limit the object of Claim 2, since the shape of the first object (the brush) is defined by general references to the corresponding shapes of a second object (the roll), which is not part of the claimed first object.

3. **Nevertheless**, if lines 5-10 of Claim 5 are added to the characterizing clause of Claim 2, these feature, together with the features claimed in lines 5-6 of Claim 2, limit the object of Claim 2, even if these features specify the claimed brush by the result to be achieved, since the invention can be described only in this way.

4. Consequently, Claim 2 is regarded as follows:

“Cleaning brush with a brush covering (2) for use in metal, especially aluminum, hot-rolled strip mills, characterized by the fact that the cleaning brush or its brush covering (2) has a contour which is so extensively matched to the contour of the rolls, especially the work roll (4), that a largely uniform contact pressure between the roll and the cleaning brush or brush covering is

established over the body length of the roll, preferably in the region of the strip width of the roll, with a minimal contact force  $F_B$  for a sufficient cleaning effect (Figure 4a), and that it has the contour of a given polynomial, an exponential function, a trigonometric function, etc.

5. The above-cited Claim 2 satisfies the requirements of the PCT with respect to novelty and inventive activity (Articles 33(2) and 33(3) PCT):

1. The document D1, which is regarded as the most closely related prior art, discloses (cf. Figure 6) a cleaning brush from which the object of Claim 2 differs by virtue of the fact that “the cleaning brush or its brush covering has a contour which is so extensively matched to the contour of the rolls, especially the work roll, that a largely uniform contact pressure between the roll and the cleaning brush or brush covering is established over the body length of the roll, preferably in the region of the strip width of the roll, with a minimal contact force  $F_B$  for a sufficient cleaning effect.”

The object of Claim 2 is thus novel (Article 33(2) PCT).

2. The object of Claim 2 is based on inventive activity, because the prior art neither discloses nor proposes that the contour of the cleaning brush should be matched to the contour of the rolls to achieve a largely uniform contact pressure over the body length of the roll (Article 33(3) PCT).

6. Claims 3 and 4 are dependent on Claim 2 and thus likewise satisfy the requirements of the PCT with respect to novelty and inventive activity (Articles 33(2) and 33(3) PCT).

7. The object of Claim 1 concerns an ordinary method for producing cleaning brushes in accordance with Claim 2 with all of the claimed features of this brush. Consequently, mutatis

mutandis, the same objections can be raised against Claim 1 as against Claim 2.

8. Claim 5 satisfies the requirements of the PCT with respect to novelty and inventive activity (Articles 33(2) and 33(3) PCT):

1. The document D2, which is regarded as the most closely related prior art, discloses (cf. Claims 1 and 3) a method from which the object of Claim 5 differs by virtue of the fact that the method achieves a uniform contact pressure in the region of the strip width by the shape of the cleaning brush instead of by controlling the contact pressure at the ends of the cleaning rolls.

The object of Claim 5 is thus novel (Article 33(2) PCT).

2. The object of Claim 5 is based on inventive activity, because the prior art neither discloses nor proposes that the method of Claim 5 should be used for the operation of a cleaning brush (Article 33(3) PCT).

9. Claims 6-8 are dependent on Claim 5 and thus likewise satisfy the requirements of the PCT with respect to novelty and inventive activity (Articles 33(2) and 33(3) PCT).